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AUTHOR Jacobs, Lucy Cheser; And Others
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ABSTRACT

The purpose of the study was to investigate grading patterns at Indiana University at two points in time to ascertain whether or not grade inflation had occurred. Grades were compared in classes that were taught by the same professors and were of the same size in 1970-71 and 1975-76. The ability level of the students was statistically controlled. Evidence was found of grade inflation. Grades in the same classes taught by the same professors were significantly higher in 1975-76 despite the fact that the students' average SAT scores were significantly lower. One of the most conspicuous changes in the grading pattern over the five-year period was the significant increase in the percent of A's awarded. (Author/MSE)

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University Grade Inflation After Controlling for Courses and Academic Ability

INDIANA STUDIES IN HIGHER EDUCATION

Number Thirty-Seven

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UNIVERSITY GRADE INFLATION
AFTER CONTROLLING FOR COURSES AND ACADEMIC ABILITY

LUCY CHESER JACOBS
JUDITH J. JOHNSON
JOHN M. KEENE, JR.

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DIVISION OF RESEARCH AND DEVELOPMENT
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Abstract

The purpose of the study was to investigate grading patterns at Indiana University at two points in time in order to ascertain if grade inflation had occurred. Grades were compared in classes that were taught by the same professors and were of the same size both in 1970-71 and 1975-76. The ability level of the students was statistically controlled.

Evidence was found for grade inflation. Grades in the same classes taught by the same professors were significantly higher in 1975-76 despite the fact that the students' average SAT scores were significantly lower.

One of the most conspicuous changes in the grading pattern over the five-year period was the significant increase in the percent of W's awarded.

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Introduction

The rise in grade-point average in recent years for college undergraduate students has been of national concern. This phenomenon, labeled "grade inflation," has been observed at all types of institutions of higher learning across the country. The term inflation (borrowed from economics) is appropriate. Just as monetary inflation is characterized by rising prices and a decline in the purchasing power of money, so grade inflation is marked by constantly higher grades with a decrease in their intrinsic value. As a consequence, it has become more difficult to interpret the meaning of the higher grades and their usefulness as indicators of potential performance has been reduced. Graduate schools are now looking less at students' undergraduate grade-point averages and more at class rank and entrance examination scores.

The phenomenon of grade inflation is well documented. Juola (1974) studied the rate of increase in grade-point average from 1960-1973 at 134 institutions. He found that the total change for the sample institutions was .404 points or an increase from a 2.4 GPA in 1960 to 2.8 in 1973. The same trend and nearly the same magnitude of change were observed in both large and small, two-year and four-year, and public and private colleges and universities across the country. Juola concluded that grade inflation was a universal phenomenon.

In 1975-76, Suslow at the University of California surveyed the leading 50 federally funded research universities and institutes of technology. The survey examined grade-point averages and letter grade distributions from the early 1960's to the mid-1970's. The institutions reported a higher percentage of A grades in the 1970's than were awarded in the 1960's. In fact, during that period, the percentage of A

grades more than doubled, from 16 per cent to 34 per cent, while the percent of C grades decreased by almost half, from 37 per cent to 21 per cent. The rising trend in the average letter grades began around 1964. A mean grade-point index was derived for respondent institutions. It was found that the average index increased from C+ in 1963 to a B in 1974.

Trow reported the findings of a 1969-1975 survey that included 25,000 undergraduates. Trow's findings provided dramatic evidence of grade inflation. In 1969, only 18 per cent of undergraduates reported a cumulative grade-point average of B+; in 1975, this proportion had doubled to 36 per cent.

Scully reported a study conducted at the University of Michigan which showed that freshman GPA's at that institution for the year 1974-75 were the highest ever earned despite the fact that this same freshman class was the lowest in more than two decades in its performance on scholastic aptitude tests.

In an article in the Chronicle of Higher Education (October 3, 1977) the findings of a survey of 4400 professors at 161 colleges of all types throughout the United States were published. One of the findings was that 94 per cent of the professors surveyed agreed that grade inflation had become a significant, if not serious, problem of academic standards at their institutions. Two-thirds of the faculty surveyed admitted to not applying as high standards in assessing students' work as they thought they should.

Recent investigations of grades at single institutions from Broward Community College to Harvard University have reported grade inflation.

Most conclusions regarding grade inflation have been based upon comparisons between grade-point averages or grade distributions over time, without considering the ability level of the students or the fact that the comparisons were based on a diverse collection of courses. The mere granting of higher grades does not necessarily indicate grade inflation

if the comparisons are made with students of different ability levels or those taking different courses. Little evidence has been offered to ascertain whether grading standards have changed in the same courses when taught by the same professors to students of comparable ability.

The purpose of this study was to investigate the grading pattern at Indiana University at two points in time in order to ascertain if grade inflation had occurred. The two academic years 1970-71 and 1975-76 were chosen for comparison. The unique aspect of the present investigation is that it focused on a comparison of undergraduate students' course grades over time when the professors and courses were the same and the ability level of the students was statistically controlled. Grade inflation was operationally defined as an increase in average grades over time after adjusting for the ability level of the students, the nature of the course, and the professor.

Procedure

The master course files in the Registrar's office at Indiana University were examined for the two academic years (1970-71 and 1975-76) in order to locate courses taught by the same professors during both of the years. Two hundred sixty-one courses were identified. A list of the professors, with their course and section numbers, was sent to Data Systems and Services in order to obtain a listing of the students enrolled in each of the courses. Using the students' Social Security numbers, it was possible to obtain a record of the grades given in each course. Scholastic Aptitude Test (SAT) scores were also obtained for each student enrolled in these courses.

An examination of the enrollment data revealed that a number of the courses had increased in size over the five year period. It is known from previous research that grading patterns tend to differ in large and small classes.

Consequently a decision was made to categorize classes on the basis of enrollment. Small classes were defined as those with enrollments of 12 to 50 and large classes were defined as those with enrollments of more than 50. The use of 50 as the cut-off point for the two groups was arbitrary. Only classes in the same size category and taught by the same professor both of the academic years under investigation were included in the study. This design permitted grades in small classes in 1970-71 to be compared with grades in small classes in 1975-76 for the same courses taught by the same professors. Similar comparisons were made of grades in large classes for the two years. A number of classes were eliminated from the study because of substantially different class size over the five year period. One hundred and nineteen classes in the same size category and which had been taught by the same professor both in 1970-71 and 1975-76 were identified. However, because of the constraint that SAT scores had to be available for the students enrolled in those classes, the sample size was reduced. The final sample included a total of 104 classes: 52 small classes taught by the same professors both years and 52 large classes taught by the same professors both of the years. A total of 19,615 students were enrolled in these 104 classes. Courses from all of the major discipline areas at the University were included. Thirty (28.84 per cent) of the classes were in social sciences, 20 (19.23 per cent) were in natural sciences, 31 (29.80 per cent) were in humanities, and 23 (22.12 per cent) were in applied areas.

Traditional grades were converted from letters to their numerical equivalents by using the standard four point system. Plus and minus grades were not considered separately (e.g., B+, B, and B- were all treated as B grades). Non-traditional grades (e.g., S, P) were not included in the analysis of grade-point averages; however, a count of these non-traditional grades was made in order to compare their frequency during the two academic years.

Using the numerical grade equivalents, the grade-point average for each class for the two years was computed. These grade-point averages were entered into a repeated measures analysis of covariance design with total SAT scores as the covariate. The computations were accomplished by utilizing the MANOVA program of the Statistical Package for the Behavioral Sciences, Level 7.0 (Cohen & Burns, 1977). Therefore, in using this design average course grades were compared by year, within the size categories, after adjusting for the scholastic ability of the students. Table 1 shows the adjusted mean GPA's for small classes and large classes and for the combined classes for the two time periods.

TABLE 1

Adjusted Mean Grade Averages in Small and Large Classes for Two Academic Years

Size	N	1970-71	1975-76	Total
Small	52	2.93	3.10	3.02
Large	52	2.65	2.74	2.69
Total	104	2.77	2.95	

TABLE 2

Summary of Analysis of Covariance of Grades for Small and Large Classes at Two Time Periods

Source of Variation	SS	df	MS	F	p
Residual	7.0132	101	.0694		
Regression	.6738	1	.6738	9.7042	.0024
Date	1.2553	1	1.2553	18.0775	.0000
Date by Size	.0429	1	.0429	.6174	.4338
Error	27.6649	101	.2739		
Regression	.0371	1	.0371	.1355	.7136
Size	5.2350	1	5.2350	19.1120	.0000

The 1975-76 grade averages in the selected classes were higher than the 1970-71 grade averages in those same classes. The total increase was slightly greater for small classes.

The results of the analysis of covariance presented in Table 2 indicated that this increase in average grades over the five year period is statistically significant even after the effect of the scholastic ability of the students has been removed. The adjusted average grades in the small classes were found to be significantly higher than those of the large classes. The increase in adjusted average grades was somewhat greater for the small classes between the two years.

Table 3 presents the mean total Scholastic Aptitude Test (SAT) scores for students enrolled in the selected courses for the two academic years.

TABLE 3

Mean Total SAT Scores for Large and Small Classes for Two Academic Years

Size	N	1970-71	1975-76
Small	52	1070.22	1044.15
Large	52	1046.30	1005.16
Total	104	1058.26	1024.65

Analysis of variance of the mean SAT scores showed that they declined significantly from 1970-71 to 1975-76. Clearly the increase in average grades over the five year period cannot be attributed to an increase in the ability level of the students.

A marked difference between the average SAT scores for small and large classes can also be observed in both of the academic years. The higher mean for small classes can be accounted for by the fact that small classes are usually upper division classes and hence represent a more select group of students.

To further illustrate the change in grades over the five year period, per cent grade distributions were examined.

The per cent grade distributions by academic year for each size category are presented in Table 4. The grade categories used were A, B, C, D, F, I (Incomplete), W (Withdrawal), S (Satisfactory), and P (Pass).

TABLE 4

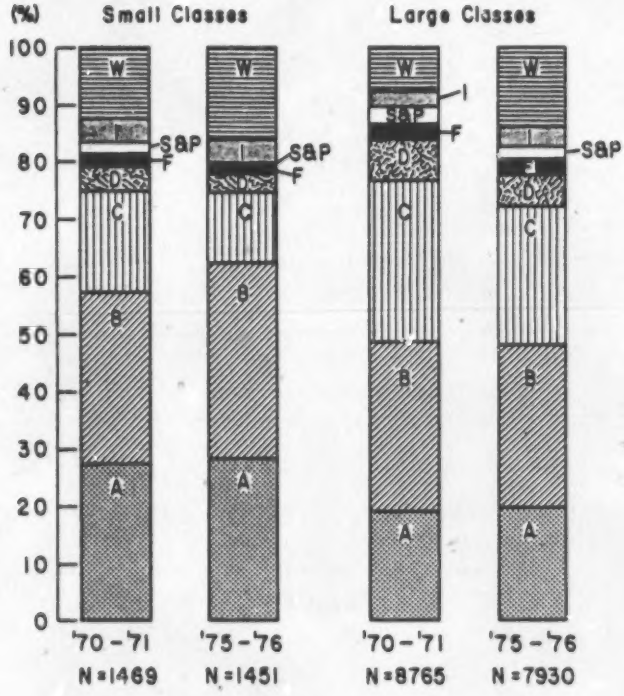
Per Cent Grade Distributions for Two Academic Years

		A	B	C	D	F	S/P	I	W	Total N
Small	1970-71	27.5	29.9	17.9	4.2	2.4	2.1	3.95	12.1	1469
	1975-76	28.1	34.1	12.3	3.2	1.6	.62	3.8	16.2	1451
Large	1970-71	19.1	29.6	28.2	7.1	2.7	3.0	2.6	7.8	8765
	1975-76	19.8	28.3	24.3	5.4	3.0	2.2	3.5	13.6	7930

Changes in grade distributions between 1970-71 and 1975-76 were observed in both small and large classes. Table 4 indicates that in small classes the per cent of A's and B's increased while the per cent of C's, D's and F's were decreased from 1970-71 to 1975-76. The largest changes were in the B and C categories. Almost two-thirds (62.2 per cent) of the grades given in small classes in 1975-76 were A's and B's. The increase in the per cent of W's over the five year period is noteworthy. W's represented 16.2 per cent of all grades awarded in small classes in 1975-76, compared with 12.1 per cent in 1970-71.

In large classes the most obvious change in grade distribution from 1970-71 to 1975-76 is in the W category. The percentage of grades in this category increased from 7.8 in 1970 to 13.6 in 1976. Students appear to be making more widespread use of the withdrawal option. These changes in the per cent grade distribution are illustrated graphically in Figure 1.

Figure I. Percentage of Grades Assigned in Small and Large Classes 1970-71 and 1975-76



Summary and Discussion

Evidence was found that grade inflation occurred between the 1970-71 and the 1975-76 academic years at Indiana University. There was a significant increase in the average grades awarded in the same courses by the same professors after an adjustment was made for the ability level of the students. It was found that grades were significantly higher for students in the selected classes in 1975-76 despite the fact that their average Scholastic Aptitude Test scores were significantly lower.

One possible explanation for the increase in average grades is that undergraduate students are working harder than the undergraduates of five years ago. The keen competition to enter graduate studies and professional programs may have contributed to grade inflation.

Another possible cause of grade inflation is that professors have become more lenient in recent years in assigning grades. It has been suggested that some professors award high grades to majors in the professors' own fields in order to give them a competitive advantage in seeking admission to graduate and professional programs of study. Faculty members may also have become more lenient in their grading practices in order to encourage enrollment in their courses.

Another possible reason for greater leniency in grading is the increased use of student evaluations. Faculty members may be awarding higher grades in order to obtain higher ratings from their students.

Many departments and schools within universities have relaxed the withdrawal rule. It has become easier to withdraw from a course at any time during the semester and still receive a grade of W. This phenomenon may also contribute to grade inflation because poor or failing grades which the students might otherwise have received are not entered on students' records. Evidence was found in this study that the per cent of W's increased substantially from 1970-71 to 1975-76.

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